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ABSTRACT

This paper on the subject of smell in communication provides a brief survey of the subject, pulling together a wide variety of disparate ideas across many disciplines. The paper is comprised of a general introductory section and separate sections on the olfactory nonverbal communication of animals and human beings. The uses to which animals put the production and reception of odors are grouped under the following categories: safety and protection, travel, mating, food gathering, and territorial marking. The section on the olfactory aspect of nonverbal communication in human beings is divided into three areas of purpose: safety; realism; and personal, encompassing intrapersonal, interpersonal, and intragroup aspects. (HKM)

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THE OLFACTORY FACTOR

IN

NONVERBAL COMMUNICATION

There are those whose study is of smells.
Rudyard Kipling

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THE OLFACTORY FACTOR IN NONVERBAL COMMUNICATION

When this writer first began research on the subject of smell, he was of the opinion that little information would be available. The observation was based upon the brevity and infrequency of the references in standard speech communication books and books on nonverbal communication. However, it turns out that there is no paucity of materials, either in quantity or in quality, but they are scattered throughout the humanities and the sciences. Such anthropologists as Edward T. Hall have done extensive work in the area, while others in the fields of medicine, psychology, et al., have been helpful.

Three separate parts will comprise this paper. Following an introductory section concerning the entire area, olfactory nonverbal communication of animals and that of human beings will be discussed.

The purpose of this paper is to provide a brief survey of the subject, pulling together a wide variety of disparate ideas across many disciplines. Perhaps indepth studies will be encouraged in specific areas cited. A selected, but extensive, bibliography has been provided.

To put olfactory nonverbal communication into useful perspective, we need to go back to Aristotle, who, in his Rhetoric differentiated between artistic and non-artistic proofs (means of persuasion). He divided the former into logical, pathetic, and ethical. Nonverbal communication is a part of pathetic (emotional) proof. Following this, we can fit the olfactory factor into the organization of Brooks, listing it as an aspect of object language. (Brooks, 153, 165f.)

The complexity of the sense of smell is due largely to the sensitivity of the receiving organ and the variety of differentiations possible. Even man's aborted sense of smell can detect certain smells if there is only one part per million of air. "Artificial musk can be smelled when there are only .00004 milligrams per liter of air." (Hamilton, 82) The nose has sufficient glomeruli and neurons that "...it is possible to get 16,000,000 different patterns, corresponding to that many odors." (Boulogne, 80, translator's note)

Pleasant smells are welcome, if everyone agrees that they are indeed pleasant, but bad smells may even be legislated against. The English Parliament in 1875 passed Disraeli's act declaring a bad smell a "nuisance." (McKenzie, 12) One of the currently fastest-growing areas of science is that of odor investigation. "There's increasing interest in odor because it is the one air pollutant you can sense. If something stinks, you know it, and you complain," stated Frank Jarke, a research chemist with the Odor Science Center of the Illinois Institute of Technology's Research Institute in Chicago. (Van)

Recorded attempts to explain how we smell go all the way back to the Roman poet Lucretius (96?-55 B.C.). Categorization of smells has occupied the time of many scholars. Henning decided that smells are spicy, flowery, fruity, resinous, burnt, or foul. (Parker, 73ff) Amoore calls the categories camphoraceous, musky, floral, pepperminty, ethereal, pungent, and putrid. (Hamilton, 82) Others have similar labels involving extensive research. (Harper; Hall, 1963; and Lawless and Engen)

Studies have been done on the affective aspect of odors (Kenneth), the memory for odors (Lawless and Cain; Ades and Rodrigues), and the effect of "noise" or interferences with smell (Cain; Lawless and Engen).

ANIMAL OLFACTORY NONVERBAL COMMUNICATION

It has long been accepted that most species of animals have a better sense of smell than humans do. Opinions differ, however, concerning the necessity of the difference. There is evidence to indicate that humans use very little of their olfactory potential, preferring to utilize other senses. This idea will be explored later.

The uses to which animals put odor production and reception will be grouped under the following categories: safety and protection, travel, mating, food gathering, and territorial marking.

Most animals use their keen sense of smell to warn them of impending danger. Feeding deer are constantly testing the breeze as they graze. Such animals as bears can detect the smell of a man hundreds of yards upwind. Fish are dispersed by smelling the scent of the crushed skin of a member of their own species. Reindeer bolt from the spot where a deer had previously left a record of his fear by secretions from his hoof (interdigital) glands. (Hediger, 46)

However, reception of odors is not the only use to which animals put them. The well-known skunk and certain moths and other insects produce their own scent, which is disagreeable to their

enemies.* Some bats squirt a stinking secretion from facial glands. (Hediger, 146)

Most animals make extensive use of their sense of smell in order to find their way back to the nest, the herd, or the family. There has been extensive research, e.g., in the behavior of ants as they follow olfactory trails back to the nest. (Rabaud, ch. 3; McKenzie, 30ff.)

It is in mating that the olfactory abilities of animals and insects reach their most impressive peak. Dogs, e.g., not only determine the sex of an approaching dog by smelling the urine of the stranger, but can determine the potential receptivity of a female. To a human being, urine smell is urine smell, but a dog "... is able to differentiate at least 52 different variations in its aroma, each of which conveys to its mind the exact state of the amatory inclinations of the female at the moment the urine was released." (Smythe, 77)

A female Great Peacock moth is reported to have attracted male moths from up to a mile and a half to the house where she was held captive in a screened cage. (McKenzie, 25f., quoting the French naturalist Fabre) Males were able to shut out or ignore distracting odors, naphthaline, etc., and still follow the scent of the female moth. (McKenzie, 27f.)

> The term "pheromone" was coined by Karlson and Butenandt (1959) to designate substances secreted by an animal to influence the behavior of other animals of the same species. (Beroza, 3)

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*Of related interest, many botanists advocate "companion planting," interspersing rows of vegetables and rows of plants which exude odors repugnant to parasites of the vegetables.

The word is derived from the Greek: pherein, to carry; horman, to excite.

Odor is an important aspect of the food-gathering procedure of many animals and insects. Fish are able to smell food through the water. (Parker, 63ff.) Much formal and informal research in recent years, triggered in part by the popularity of the movie Jaws, has documented the way in which sharks are driven into a feeding frenzy by the presence of blood in the water. Many insects, such as bees, are attracted to flowers by scent alone.

More frequent use of national parks, particularly Yellowstone, has increased the number of tourist deaths due to maulings by bears. Such tragedies are a predictable result of the invasion of the bears' natural habitat. The scent of food caches and garbage dumps attracts bears from great distances. They are also attracted by blood. A camper in a sleeping bag appears to the bear to be just another piece of aromatic meat, if the camper happens to have an open wound or is undergoing some other emission of blood. The grizzly, who can kill a full-grown bison with a single blow to the head, rips open the sleeping bag as easily as he extracts grubs from a rotting log.

Various animals circumscribe their territories by different means, but the most common is that of scent. The family dog makes the rounds of the bushes and trees bordering his land. Hoagland observes that since dogs evolved from wolves over a period of 15,000 to 30,000 years, wolves are dogs off the reservation, and dogs are reservation wolves. He notes colorfully that, like dogs, wolves "...mark their passage through life with semantic squirts of pee." (Hoagland, 74) There are a number of carefully done, well-documented studies which have treated this subject. (Peters and Mech)

HUMAN OLFACTORY NONVERBAL COMMUNICATION

Fe, fie, foe, fum,
I smell the blood of an Englishman!

Authorities are sharply divided on the issue of whether there is actually a distinctive racial odor which distinguishes the various groups of mankind.* However, there are many ways in which the olfactory aspect of nonverbal communication is indeed significant in a number of areas.

This section is divided into three areas of purpose: safety, realism, and personal, the latter encompassing intrapersonal, interpersonal, and intragroup.

One of the accepted ways of checking the freshness (safety) of foods is to smell them. This technique works well in many cases, such as for sour milk and rancid butter. The test is less useful, though, for testing cheeses and other foods with naturally strong odors. The test also loses much of its effectiveness when taken across cultural boundaries, e.g., in the case of some nomadic Arabs who deliberately induce souring of milk by mixing it with cattle urine.

An interesting and highly useful safety device is the practice followed by utility companies of adding captan to natural gas. Such gas is normally odorless, so the captan gives it a recognizable odor as an aid to leak detection. (Lancaster New Era, July 5, 1978)

As noted above, humans do not rely upon their sense of smell as much as animals do. However, this was not always so. Early man

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*See e.g., the series of items by Conrad, Coon, and Montagu cited in the bibliography.

had a much better sense of smell than we do. American Indians, at the time of the coming of the Europeans, could track enemies and game by means of scent.

There are several theories offered to explain this nearly complete abandonment of smell as a major sense. One such theory is that such a shift was the automatic result of the change from four-legged locomotion to walking in an upright position, then taking to the trees for protection, effecting an increase in the distance from nose to ground. (Hall, 1966, 36)

Another factor is that of mechanization and specialization. Man has so extended the reach of certain other senses--sight, hearing, and touch (reach)--that he now has less use for his sense of smell. (Hall, 1966, 37)

It is commonly known that persons who are robbed of one sense will cultivate the use of another. Blind persons increase, by practice, the tactile effectiveness of their fingertips. They also hone their olfactory capabilities. There is a well-documented story of a blind girl, working in a laundry, who could identify patrons by the odor of the bundles of soiled clothes. (Kalmus, 102)

The reduced capacity for reception of olfactory stimuli by most humans is not totally a negative trait. Just as we must filter out and respond to only a portion of our environment in other ways, it is helpful to be able to respond to a limited number of smells.

> One consequence of the loss of olfaction as an important medium of communication was an alteration in the relationship between humans. It may have endowed man with greater capacity to withstand crowding. If humans had noses like rats, they would be forever tied to the full array of emotional shifts occurring in persons around them.... To say the least, life would be much more involved and intense. It would be less under conscious control, because the olfactory centers of the brain are older and more primitive than the visual centers.
>
> (Hall, 1966, 36)

Illnesses often have peculiar, identifiable odors. This writer was recently told about a man who could tell when his diabetic wife needed insulin. Dr. McKenzie described the smell of the diabetic as sweet, rheumatism as acid, smallpox as "horrible," and nephritus as chafflike. He also cited Creighton's A History of British Epidemics, p. 685, footnote, as quoting Bacon as saying that the plague smelled sweet. (McKenzie, 23f.)

Realism is often the goal of writers, motion picture producers, entertainers, and others. Attempts to add the dimension of smell to films were made in 1959 and 1960 by Walter Reade, Jr. and Michael Todd, Jr., respectively. (Macgowan, 14) According to reviewers, however, Behind the Great Wall and Scent of Mystery--the latter "In Glorious Smell-O-Vision"--were failures in terms of the olfactory realism. The odors of the "smellies" became mixed, confused, and indistinct. (Crowther)

Children's books sometimes have spots to be rubbed, so that the pictured strawberry smells like one. Teachers can buy little stickers which also exude odors when rubbed. These are given as little prizes for good work. Spices and similar easily identifiable materials are often used in classroom exercises. (Flaherty and Manke)

In terms of intrapersonal communication, the manufacturers of perfume probably are as dependent upon the effect of their product upon the wearer as upon other persons. The wearer gains a psychological lift from the feeling that he or she is socially acceptable. Much has been written about the American fetish of cleanliness and body scent. By one means or another, Americans have been convinced that normal odors resulting from exercise or emotional stress need

to be removed and replaced with other smells. Sometimes, as in the case of musk-based perfumes, one animal odor is being replaced by another animal odor having a similar function:

> One must admit that there's something more than a little bit ludicrous about a woman who painstakingly scrubs off her own biological scent, dutifully deodorizes her body's every nook and cranny, and then anoints herself with a perfume concocted largely from the musky sex scent of some other, wiser mammal. (Davis, 144)

Perfume is not new, however, and is not peculiar to Americans. The word is from the Latin per fumum, "through smoke," indicative of its early beginnings in incense. (Aikman, 532) Religion and incense have always been closely allied. Personal perfuming probably got a solid boost from John Wesley's dictum: "Cleanliness is next to godliness." It is an easy step to correlation between sweet smells and sweetness of character. Boulogne asserted that perfume reminds one of the goodness of Christ. (Boulogne, 93f.)

Another major intrapersonal aspect of smell concerns taste. "Tasting...is largely smell." (Aikman, 531) Anyone who has had his sense of smell temporarily suspended due to a head cold can attest to that fact.

The interpersonal aspect of odor has many ramifications. As noted above, Americans are obsessed with the idea of personal cleanliness. Our bodies must be minimally neutral in scent, preferably artificially pleasing. It is a way of masking our feelings. Nervous perspiration is prevented or neutralized, sexual odors are eliminated or covered up, and the smell of fear and anger are camouflaged.

However, the same smells of fear and anger that dogs are able to discern are there for humans to ferret out. Some cultures do. The Arabs often ask permission to smell a prospective bride, sniffing out residual signs of a foul disposition. (Hall, 47) Trained

observers may note the odor of mental illness, along with other diseases mentioned previously.

Lynch mob psychology may be directly related to olfaction. Individual members of a frenzied mob may be responding to the smells of anger, or to the chemical manifestation being overtly smelled or else responded to covertly.

It has been proposed that the sense of smell is tied to the establishment of sexual identity in children, assisting them in determining what their relationship ought to be with each parent. (Kalogerakis)

One author examined the matter of intercourse between parents of a nursing infant, all in the same room. He suggested that it was odor, not noise or other disturbance which awakened the baby and caused it to cry. The reason, he thinks, is that the infant fears that its mother's impending pregnancy might result in less milk or no milk.

> What most likely happens is: sexual arousal of a nursing mother, release of milk by her breasts, diffusion of the odor to the child, infant wakes, infant cries. (Krebs)

This explanation may be valid, but there is another, more prosaic, possibility. Assuming that the flow of milk does begin, and accepting the hypothesis that the baby is awakened by the smell, the child may cry because the odor causes feelings of hunger--even though he or she may have been fed only recently.

For an extensive introduction to the sexual aspects of olfaction, see Havelock Ellis' massive study.

In the area of intragroup olfactory nonverbal communication, one finds one's attention directed to territoriality, just as in the case of animals. The problems of protection and invasion are

similar in many ways. It is expected in our society that one's olfactory space--the column of air, of varying size, surrounding each person--will not be violated. The current drive by non-smokers against smokers is an excellent example. Included also are "...flatus, tainted breath, and body smells." (Goffman, 47) Of these, the latter two have been alluded to above.

Flatus is in nearly every situation considered taboo. Exceptions might include a hospitalized person, in which situation the undisciplined passing of gas would be attributed to the illness and excused. In other situations all or part of a group may give it acceptance. One such example is in an all-male environment, such as an army barracks, in which situation what is normally frowned upon elsewhere may even become a competitive activity. A similar situation presents itself among schoolboys, who may use the activity as a deliberate device to harass the teacher. (Largey and Watson, 156)

This concludes a very brief and admittedly sketchy introduction to the concept of the olfactory factor in nonverbal communication.

BIBLIOGRAPHY

Books

Argyle, Michael. Social Interaction. Chicago: Aldine Publishing Company, 1969.

Berne, Eric. Sex in Human Loving. New York: Simon and Schuster, 1970.

Beroza, Morton, ed. Chemicals Controlling Insect Behavior. New York: Academic Press, 1970.

Blair, Walter and John Gerber. Repertory. Chicago: Scott, Foresman and Company, 1960.

Boulogne, Charles-Damian. My Friends the Senses. Translated by Jane Howes. New York: P.J. Kenedy and Sons, 1953.

Brooks, William D. Speech Communication, 2nd Ed. Dubuque, Iowa: William C. Brown Company, 1974.

Conrad, Jack. The Many Worlds of Man. New York: Thomas V. Crowell Company, 1964.

Davis, Flora. Inside Intuition: What We Know About Non-verbal Communication. New York: McGraw-Hill Book Company, 1973.

Dimond, Stuart J. The Social Behavior of Animals. New York: Harper and Row, 1970.

Douglas, Mary. Purity and Danger. Middlesex, England: Penguin Books, Ltd., 1970.

Ellis, Havelock. Studies in the Psychology of Sex. Two Volumes. New York: Random House, 1905, 1942, et al.

Goffman, Erving. Relations in Public. New York: Harper and Row, Publishers, 1971.

Hall, Edward T. The Hidden Dimension. Garden City, N.Y.: Doubleday and Company, Inc., 1966.

Harper, Roland, et al. Odour Description and Odour Classification: A Multidisciplinary Examination. New York: American Elsevier Publishing Company, Inc., 1968.

Books (Cont.)

Hediger, Heini. Studies in the Psychology of Captive Animals in Zoos and Circuses. London: Butterworth and Co., 1955.

Key, Mary Ritchie. Nonverbal Communication: A Research Guide and Bibliography. Metuchen, N.J.: The Scarecrow Press, Inc., 1977.

Knapp, Mark L. Nonverbal Communication in Human Behavior, 2nd Ed., New York: Holt, Rinehart and Winston, 1978.

Knapp, Mark L. Nonverbal Communication in Human Interaction, 2nd Ed. New York: Holt, Rinehart and Winston, 1978.

Macgowan, Kenneth. Behind the Screen: The History and Techniques of the Motion Picture. New York: Delacorte Press, 1965.

Marler, Peter and William J. Hamilton, III. Mechanics of Animal Behavior. New York: John Wiley and Sons, Inc., 1966.

McKenzie, Dan, M.D. Aromatics and the Soul. London: William Heinemann, Ltd., 1923.

Meerloo, J. A. M. Unobtrusive Communication: Essays in Psycholinguistics. Assen, Netherlands: Van Gorcum, 1964.

Parker, G. H. Smell, Taste, and Allied Senses in the Vertebrates. Philadelphia: J. B. Lippincott Company, 1922.

Rabaud, Etienne. How Animals Find Their Way About. Trans. I. H. Myers. New York: Harcourt, Brace and Company, 1928.

Smythe, Reginald H. Animal Habits: The Things Animals Do. Springfield, Ill.: Charles C. Thomas, Publisher, 1962.

Stevenson, Burton. The Home Book of Quotations, Fifth Ed., Rev. New York: Dodd, Mead and Company, 1947.

Wertz, Marjorie Dean. Toward a Theory of Nonverbal Communication. Unpublished Ph.D. Diss., 1972.

Wood, David L., et al., ed. Control of Insect Behavior by Natural Products. New York: Academic Press, 1970.

Periodicals

Ades, Cesar and Maria Rodrigues. "Effect of Previous Exposure on Response Decrement Induced by an Olfactory Stimulus." Psychological Reports. 37 (1975), 271-77.

Periodicals (Cont.)

Cain, William S. "Differential Sensitivity for Smell: 'Noise' at the Nose." Science. 195 (February, 1977), 796-98.

Coon, Carleton S. "On Montagu's Review of Conrad's 'The Many Worlds of Man.'" Letter to the Editor. American Anthropologist. 68 (April, 1966), 518.

Crowther, Bosley. "On Making Scents." New York Times. December 13, 1957, Section 1, Pg 3, Column 1.

Crowther, Bosley. "How Does It Smell?" New York Times. February 28, 1960, Section 2, Pg 1, Columns 7 and 8.

Eckman, Paul and Wallace V. Friesen. "The Repertoire of Nonverbal Behavior; Categories, Origins, Usage, and Coding." Semiotica. I (1969), 49-98.

Egelhof, Joseph. "Bomb-sniffing rodents trained to smell a rat." Chicago Tribune. September 24, 1978, 1:4.

Fabricant, Noah D. "Sexual Functions and the Nose." American Journal of the Medical Sciences. 239 (April, 1960), 498-502.

Flaherty, Rose Izzo and Leona Manke. "Take Your Spice Rack into the Classroom." Instructor. 83 (February, 1974), 82f.

Hall, Edward T. "A System for the Notation of Proxemic Behavior." American Anthropologist. 65 (1963), 1003-1026.

Hamilton, Andrew. "What science is learning about smell." Science Digest. November, 1966, 81-84.

Harrison, Randall P., et al. The Nonverbal Communication Literature." The Journal of Communication. 22 (December, 1972), 406-76.

Harrison, Randall P. and Mark L. Knapp. "Toward an Understanding of Nonverbal Communication Systems." The Journal of Communication. 22 (December, 1972), 339-52.

Hoagland, Edward. "A mountain with a wolf on it stands a little taller." Sports Illustrated. January 14, 1974, 74.

Kalmus, Hans. "The Chemical Senses." Scientific American. 198 (April, 1958), 4, 97-106.

Periodicals (Cont.)

Kalogerakis, Michael G. "The Role of Olfaction in Sexual Development." Psychosomatic Medicine. XXV (Sept.-Oct. 1963) 5, 420-32.

Karlson, Peter and Adolph Butenandt. "Pheromones (ectohormones) in Insects." Annual Review of Entomology. 4 (1959), 39.

Kenneth, J. H. "An Experimental Study of Affects and Associations Due to Certain Odors." Psychological Monographs. XXXVII (1927) 2, 59.

Krebs, Richard L. "Mother and Child: Interruptus." Psychology Today. 3 (January, 1970), 8, 33.

Largey, Gale P. and David R. Watson. "The Sociology of Odors." The American Journal of Sociology. 77 (1972), 6, 1021-34.

Lawless, Harry T. and Trygg Engen. "Associations to Odors: Interference, Mnemonics, and Verbal Labeling." Journal of Experimental Psychology: Human Learning and Memory. 3 (1977), 1, 52-59.

Lawless, Harry T. and William S. Cain. "Recognition Memory for Odors." Chemical Senses and Flavor. 1 (1975), 331-37.

Long, Mary M. "Scent: Poetry, Scent and Sensibility." Mademoiselle. 82 (August, 1976), 60f.

Lyman, Stanford M. and Marvin B. Scott. "Territoriality: A Neglected Sociological Dimension." Social Problems. 15 (Fall, 1967), 2, 236-49.

McGill, James R. and Bruce R. Kowalski. "Intrinsic Dimensionality of Smell." Analytical Chemistry. 49 (April, 1977), 4, 596-602.

Montagu, Ashley. "A Reply to Coon." Letter to the Editor. American Anthropologist. 68 (April, 1966), 518-19.

Montagu, Ashley. Review: "Jack Conrad, The Many Worlds of Man." American Anthropologist. 67 (June, 1965), 3, 829-30.

Moskowitz, Howard R. and Clifford L. Gerbers. "Dimensional Salience of Odors." Annals New York Academy of Sciences. 237 (1974), 1-16.

Periodicals (Cont.)

Peters, Roger P. and L. David Mech. "Scent-Marking in Wolves." American Scientist. 63 (November-December, 1975), 628-37.

"Popcorn Smell Sells." [Lancaster, Pa.] New Era. July 17, 1978, p. 18.

Rudden, Maria Rita and David E. Switzer. "Studies of Non-verbal Behavior: An Evaluation and Recommendation." Communication Quarterly. 26 (Winter, 1978), 1, 2-12.

"UGI Gets 400 Calls About Smelling Gas." [Lancaster, Pa.] New Era. July 5, 1978, p. 3.

Van, Jon. "IIT pollution probers agree their job really stinks." Chicago Tribune. 1:50. September 24, 1978.